REMARKS

Claims 1-20 are pending. Claims 1, 11 and 14 have been amended. No new matter has been added as a result of the amendments.

102 Rejection

Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Tulluri et al. (U.S. Patent No. 6,026,183). The Applicant has reviewed the cited reference and respectfully submit that the present invention as is set forth in Claims 1-20 is not anticipated or rendered obvious by Tulluri et al. (U.S. Patent No. 6,026,183).

The Examiner is respectfully directed to independent Claim 1, which recites that embodiments of the present invention are directed to a method for applying multi resolution boundary encoding to region based still image and video encoding including:

> ... transmitting boundary information associated
> with regions of the original image and image
> information with the lowest resolution coefficients;
> and successively transmitting boundary information
> associated with regions of the original image and image
> information with higher resolution coefficients.

Claims 11 and 14 recite limitations similar to those recited in Claim 1. Claims 2-10 depend from Claim 1, Claims 12-13 depend from Claim 11, and Claims 15-19 depend from Claim 14 and recite further limitations of the claimed invention.

Tulluri et al. does not anticipate or render obvious a method for applying multi resolution boundary encoding to region based still image and video encoding that includes, "transmitting boundary information associated with regions of the original image and image information with the lowest resolution coefficients; and successively transmitting

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boundary information associated with regions of the original image and image
information with higher resolution coefficients." Tulluri et al. only discloses a content
based video compression methodology. A review of the sections of the Tulluri et al.
reference cited in the final Office Action reveal that although a compression scheme is
disclosed, positive limitations of the Applicant's claimed invention are not taught or
suggested either expressly or inherently by the referenced portions. The Examiner
indicates that the Figure 1 illustration is cited to demonstrate that the Telluri et al.
reference teaches that boundary information and image information is transmitted in the
therein disclosed transmission methodology. However, a review of the discussion made
in the Tulluri et al. with reference to Figure 1, reveals that no such subject matter is
disclosed. The descriptions that accompany the Figure 1 illustration indicate that image
and speech information is transmitted through a single channel (such as that shown),
where an allocation of the relative bandwidths to be occupied by the speech and image
portions of an encoded signal is determined based on the existing conditions (see
column, 4 lines 40-60). Nowhere in the Tulluri et al. reference is the transmission for
subsequent reconstruction of boundary information associated with regions of the
original image and image information, taught or suggested either expressly or inherently.
As such, the Applicant respectfully submits that the Tulluri et al. reference simply
does not teach or suggest what the Examiner relies upon it as teaching. Consequently,
the embodiments of the Applicant's invention defined in Claims 1, 11 and 14 are neither
taught nor suggested.

It should be appreciated that, "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1989). As noted above, the claims limitation "transmitting boundary information associated with regions of the original image and image information with the lowest resolution coefficients; and successively transmitting boundary information associated with regions of the original image and image information with higher resolution coefficients" is nowhere found described, either expressly or inherently, in the Tulluri et al. reference.

Therefore, the Applicant respectfully submits that Tulluri et al. does not anticipate or render obvious the present claimed invention as is recited in Claims 1, 11 and 14, and as such, Claims 1, 11 and 14 are in condition for allowance. Accordingly, the Applicant also respectfully submits that Tulluri et al. does not anticipate or render obvious the present claimed invention as is recited in Claims 2-10 dependent on Claim 1, Claims 12-13, dependent on Claim 11, and Claims 15-20 traverse the Examiners basis for rejection under 35 U.S.C. 102(b) as being dependent on an allowable base claim.
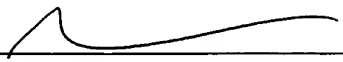
Conclusion

In light of the above-listed amendments and remarks, Applicant respectfully requests allowance of the remaining Claims.

The Examiner is urged to contact Applicant's undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

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IN THE CLAIMS

Please amend the Claims as shown below:

1.   A method for applying multi-resolution boundary encoding to

region based still image and video encoding, comprising:

dividing an original image into a plurality of regions, wherein a plurality of

boundaries associated with the plurality of the regions is detected;

encoding each of the plurality of the boundaries, whereby each of the plurality of

the boundaries contains different resolution coefficients;

decomposing each of the plurality of the regions in the original image into one or

more subbands using the plurality of the boundaries with the highest resolution

coefficients;

successively decomposing each of the plurality of the regions in a subband with

lower resolution coefficients into one or more subbands using the plurality of the

boundaries with lower resolution coefficients;

transmitting boundary information associated with regions of the original image and image

information with the lowest resolution coefficients; and

successively transmitting boundary information associated with regions of the original

image and image information with higher resolution coefficients.

11.   An apparatus for applying multi-resolution boundary encoding to region based

still image and video encoding, comprising:

means for dividing an original image into a plurality of regions, wherein a

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plurality of boundaries associated with the plurality of the regions is detected;

  means for encoding each of the plurality of the boundaries, whereby each of the

plurality of the boundaries contains different resolution coefficients;

    means for decomposing each of the plurality of the regions in the original image

into one or more subbands using the plurality of the boundaries with the highest

resolution coefficients;

    means for successively decomposing each of the plurality of the regions in a

subband with lower resolution coefficients into one or more subbands using the plurality

of the boundaries with lower resolution coefficients;

    means for transmitting boundary information associated with regions of the original

image and image information with the lowest resolution coefficients; and

    means for successively transmitting boundary information associated with regions of

the original image and image information with higher resolution coefficients.

14.   A computer readable medium providing instructions for applying multi-resolution

boundary encoding, to region based still image and video encoding, the instructions

comprising:

    dividing an original image into a plurality of regions, wherein a plurality of

boundaries associated with the plurality of the regions is detected;

    encoding each of the plurality of the boundaries, whereby each of the plurality of

the boundaries contains different resolution coefficients;

    decomposing each of the plurality of the regions in the original image into one or

more subbands using the plurality of the boundaries with the highest resolution coefficients;

successively decomposing each of the plurality of the regions in a subband with

lower resolution coefficients into one or more subbands using the plurality of the

boundaries with lower resolution coefficients;

transmitting boundary information associated with regions of the original image and

image information with the lowest resolution coefficients; and

successively transmitting boundary information associated with regions of the original

image and image information with higher resolution coefficients.